

MIDDLE SCHOOL PHYSICAL SCIENCE GAP ANALYSIS OVERVIEW

No information from the foundation boxes was used in the creation of this report – EXCEPT in the case of Structure and Properties of Matter where it was used to clarify responses due to an error in the gap analysis crosswalk tool.

Teacher Respondent Topic	# reviewed
Structure and Properties of Matter	15
Chemical Reactions	8
Forces and Interactions	4
Energy	8
Waves and Electromagnetic Radiation	4
Total	39

Alignment			
No Alignment	Weak Partial Alignment	Strong Partial Alignment	Complete Alignment

Responses From:

Meeting Location	Structure and Properties of Matter	Chemical Reactions	Forces and Interactions	Energy	Waves and Electromagnetic Radiation
Great Falls October 3 rd	1		1		1
Kalispell November 7 th	3	1	2		
Missoula/Lolo November 8 th	4	3	1	1	1
Miles City November 13 th	1	1			
Red Lodge November 14	3	1			
Billings November 15	2	1			
Bozeman December 3 rd					
Missoula/Lolo December 6 th				3	1
Great Falls December 10 th				2	1
Shelby December 11 th					
Glasgow December 12 th				1	
Havre December 13 th				1	
Total	15	8	4	8	4

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Structure and Properties of Matter

Total respondents:	15
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<u>Montana Science Content Standard 1</u> Students, through the inquiry process, demonstrate the ability to design, conduct, evaluate, and communicate the results and form reasonable conclusions of scientific investigations.	MS-PS1-1.	MS-PS1-3.	MS-PS1-4.	Grand Total
1. Identify a question, determine relevant variable and a control, formulate a testable hypothesis, plan and predict the outcome of an investigation, safely conduct scientific investigation, and compare and analyze data	4	3	5	12
2. Select and use appropriate tools including technology to make measurements (including metric units) and represent results of basic scientific investigations	3	2	3	8
3. Review, communicate and defend results of investigations, including considering alternative explanations		11	2	13
4. Create models to illustrate scientific concepts and use the model to predict change. (e.g., computer simulation, stream table, graphic representation)	13	3	9	25
5. Identify strengths and weakness in an investigation design		8		8
6. Compare how observations of nature form an essential base of knowledge among the Montana American Indians		1		1
<u>Montana Science Content Standard 2</u> Students, through the inquiry process, demonstrate knowledge of properties, forms, changes and interactions of physical and chemical systems.	MS-PS1-1.	MS-PS1-3.	MS-PS1-4.	Grand Total
1. Classify, describe, and manipulate the physical models of matter in terms of: elements, and compounds, pure substances and mixtures, atoms, and molecules	14	11	6	31
2. Examine, describe, compare and classify objects and substances based on common physical properties and simple chemical properties	7	9	7	23
3. Describe energy and compare and contrast the energy transformations and the characteristics of light, heat, motion, magnetism, electricity, sound and mechanical waves	2	4	7	13
4. Model and explain the states of matter are dependent upon the quantity of energy present in the system and describe what will change and what will remain unchanged at the particulate level when matter experiences an external force or energy change	5	2	7	14
5. Describe and explain the motion of an object in terms of its position, direction, & speed as well as the forces acting upon it		1	1	2
6. Identify, build, describe, measure, and analyze mechanical systems (e.g., simple and complex compound machines) and describe the forces acting within those systems	1	1		2
7. Give examples and describe how energy is transferred and conserved (e.g. electric to light and heat [light bulb], chemical to mechanical [fuel to propulsion])		2	4	6
<u>Montana Science Content Standard 3</u> Students, through the inquiry process, demonstrate knowledge of characteristics, structures and function of living things, the process and diversity of life, and how living organisms interact with each other and their environment.	MS-PS1-1.	MS-PS1-3.	MS-PS1-4.	Grand Total
1. Compare the structure and function of prokaryotic cells (bacteria) and eukaryotic cells (plant, animal, etc.) including the levels of organization of the structure and function, particularly with humans				0
2. Explain how organisms and systems of organisms obtain and use energy resources to maintain stable conditions (e.g., food webs,		1		1

photosynthesis, respiration)				
3. Communicate the differences in the reproductive processes of a variety of plants and animals using the principles of genetic modeling (e.g., punnett squares)	1	1		2
4. Investigate and explain the interdependent nature of populations and communities in the environment and describe how species in these populations adapt by evolving				0
5. Create and use a basic classification scheme to identify plants and animals				0
Montana Science Content Standard 4 Students, through the inquiry process, demonstrate knowledge of the composition, structures, processes and interactions of Earth's systems and other objects in space.	MS-PS1-1.	MS-PS1-3.	MS-PS1-4.	Grand Total
1. Model and explain the internal structure of the earth and describe the formation and composition of earth's external features in terms of the rock cycle and plate tectonics and constructive and destructive forces	1	1		2
2. Differentiate between rocks types and minerals types and classify both by how they are formed and the utilization by humans				0
3. Use fossils to describe the geologic timeline				0
4. Describe the water cycle, the composition and structure of the atmosphere and the impact of oceans on large-scale weather patterns				0
5. Describe and model the motion and tilt of earth in relation to the sun, and explain the concepts of day, night, seasons, year, and climatic changes	1	1		2
6. Describe the earth, moon, planets and other objects in space in terms of size, force of gravity, structure, and movement in relation to the sun				0
7. Identify scientific theories about the origin and evolution of the earth and solar system				0
Montana Science Content Standard 5 Students, through the inquiry process, understand how scientific knowledge and technological developments impact communities, cultures and societies.	MS-PS1-1.	MS-PS1-3.	MS-PS1-4.	Grand Total
1. Describe the specific fields of science and technology as they relate to occupations within those fields		4		4
2. Apply scientific knowledge and process skills to understand issues and everyday events		2		2
3. Simulate collaborative problem solving and give examples of how scientific knowledge and technology are shared with other scientists and the public		5		5
4. Use scientific knowledge to investigate problems and their proposed solutions and evaluate those solutions while considering environmental impacts		5		5
5. Describe how the knowledge of science and technology influences the development of the Montana American Indian cultures		3		3
Montana Science Content Standard 6 Students understand historical developments in science and technology.	MS-PS1-1.	MS-PS1-3.	MS-PS1-4.	Grand Total
1. Give examples of scientific discoveries and describe the interrelationship between technological advances and scientific understanding, including Montana American Indian examples		7	1	8
2. Identify major milestones in science that have impacted science, technology, and society		5		5
3. Describe science as a human endeavor and an ongoing process		3	1	4

Chemical Reactions

Total respondents:	8
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<u>Montana Science Content Standard 1</u> Students, through the inquiry process, demonstrate the ability to design, conduct, evaluate, and communicate the results and form reasonable conclusions of scientific investigations.	MS-PS1-2.	MS-PS1-5.	MS-PS1-6.	Grand Total
1. Identify a question, determine relevant variable and a control, formulate a testable hypothesis, plan and predict the outcome of an investigation, safely conduct scientific investigation, and compare and analyze data	2		3	5
2. Select and use appropriate tools including technology to make measurements (including metric units) and represent results of basic scientific investigations	1			1
3. Review, communicate and defend results of investigations, including considering alternative explanations	1			1
4. Create models to illustrate scientific concepts and use the model to predict change. (e.g., computer simulation, stream table, graphic representation)		2	1	3
5. Identify strengths and weakness in an investigation design		1	3	4
6. Compare how observations of nature form an essential base of knowledge among the Montana American Indians				
<u>Montana Science Content Standard 2</u> Students, through the inquiry process, demonstrate knowledge of properties, forms, changes and interactions of physical and chemical systems.	MS-PS1-2.	MS-PS1-5.	MS-PS1-6.	Grand Total
1. Classify, describe, and manipulate the physical models of matter in terms of: elements, and compounds, pure substances and mixtures, atoms, and molecules	2			2
2. Examine, describe, compare and classify objects and substances based on common physical properties and simple chemical properties	3	2		5
3. Describe energy and compare and contrast the energy transformations and the characteristics of light, heat, motion, magnetism, electricity, sound and mechanical waves	2	1		3
4. Model and explain the states of matter are dependent upon the quantity of energy present in the system and describe what will change and what will remain unchanged at the particulate level when matter experiences an external force or energy change		2		2
5. Describe and explain the motion of an object in terms of its position, direction, & speed as well as the forces acting upon it				
6. Identify, build, describe, measure, and analyze mechanical systems (e.g., simple and complex compound machines) and describe the forces acting within those systems			1	1
7. Give examples and describe how energy is transferred and conserved (e.g. electric to light and heat [light bulb], chemical to mechanical [fuel to propulsion])		1	1	2
<u>Montana Science Content Standard 3</u> Students, through the inquiry process, demonstrate knowledge of characteristics, structures and function of living things, the process and diversity of life, and how living organisms interact with each other and their environment.	MS-PS1-2.	MS-PS1-5.	MS-PS1-6.	Grand Total
1. Compare the structure and function of prokaryotic cells (bacteria) and eukaryotic cells (plant, animal, etc.) including the levels of organization of the structure and function, particularly with humans				
2. Explain how organisms and systems of organisms obtain and use energy resources to maintain stable conditions (e.g., food webs,				

photosynthesis, respiration)				
3. Communicate the differences in the reproductive processes of a variety of plants and animals using the principles of genetic modeling (e.g., punnett squares)				
4. Investigate and explain the interdependent nature of populations and communities in the environment and describe how species in these populations adapt by evolving				
5. Create and use a basic classification scheme to identify plants and animals				
<u>Montana Science Content Standard 4</u> Students, through the inquiry process, demonstrate knowledge of the composition, structures, processes and interactions of Earth's systems and other objects in space.	MS-PS1-2.	MS-PS1-5.	MS-PS1-6.	Grand Total
1. Model and explain the internal structure of the earth and describe the formation and composition of earth's external features in terms of the rock cycle and plate tectonics and constructive and destructive forces				
2. Differentiate between rocks types and minerals types and classify both by how they are formed and the utilization by humans				
3. Use fossils to describe the geologic timeline				
4. Describe the water cycle, the composition and structure of the atmosphere and the impact of oceans on large-scale weather patterns				
5. Describe and model the motion and tilt of earth in relation to the sun, and explain the concepts of day, night, seasons, year, and climatic changes				
6. Describe the earth, moon, planets and other objects in space in terms of size, force of gravity, structure, and movement in relation to the sun				
7. Identify scientific theories about the origin and evolution of the earth and solar system				
<u>Montana Science Content Standard 5</u> Students, through the inquiry process, understand how scientific knowledge and technological developments impact communities, cultures and societies.	MS-PS1-2.	MS-PS1-5.	MS-PS1-6.	Grand Total
1. Describe the specific fields of science and technology as they relate to occupations within those fields				
2. Apply scientific knowledge and process skills to understand issues and everyday events	1			1
3. Simulate collaborative problem solving and give examples of how scientific knowledge and technology are shared with other scientists and the public			1	1
4. Use scientific knowledge to investigate problems and their proposed solutions and evaluate those solutions while considering environmental impacts			1	1
5. Describe how the knowledge of science and technology influences the development of the Montana American Indian cultures				
<u>Montana Science Content Standard 6</u> Students understand historical developments in science and technology.	MS-PS1-2.	MS-PS1-5.	MS-PS1-6.	Grand Total
1. Give examples of scientific discoveries and describe the interrelationship between technological advances and scientific understanding, including Montana American Indian examples				
2. Identify major milestones in science that have impacted science, technology, and society				
3. Describe science as a human endeavor and an ongoing process				

Forces and Interactions

Total respondents:	4
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Montana Science Content Standard 1 Students, through the inquiry process, demonstrate the ability to design, conduct, evaluate, and communicate the results and form reasonable conclusions of scientific investigations.	MS-PS2-1.	MS-PS2-2.	MS-PS2-3.	MS-PS2-4.	MS-PS2-5.	Grand Total
1. Identify a question, determine relevant variable and a control, formulate a testable hypothesis, plan and predict the outcome of an investigation, safely conduct scientific investigation, and compare and analyze data		2	2	1	1	6
2. Select and use appropriate tools including technology to make measurements (including metric units) and represent results of basic scientific investigations	1	1	1			3
3. Review, communicate and defend results of investigations, including considering alternative explanations			1	1		2
4. Create models to illustrate scientific concepts and use the model to predict change. (e.g., computer simulation, stream table, graphic representation)	2	1	2	1		6
5. Identify strengths and weakness in an investigation design		1			1	2
6. Compare how observations of nature form an essential base of knowledge among the Montana American Indians	1					1
Montana Science Content Standard 2 Students, through the inquiry process, demonstrate knowledge of properties, forms, changes and interactions of physical and chemical systems.	MS-PS2-1.	MS-PS2-2.	MS-PS2-3.	MS-PS2-4.	MS-PS2-5.	Grand Total
1. Classify, describe, and manipulate the physical models of matter in terms of: elements, and compounds, pure substances and mixtures, atoms, and molecules						
2. Examine, describe, compare and classify objects and substances based on common physical properties and simple chemical properties						
3. Describe energy and compare and contrast the energy transformations and the characteristics of light, heat, motion, magnetism, electricity, sound and mechanical waves			1		1	2
4. Model and explain the states of matter are dependent upon the quantity of energy present in the system and describe what will change and what will remain unchanged at the particulate level when matter experiences an external force or energy change						
5. Describe and explain the motion of an object in terms of its position, direction, & speed as well as the forces acting upon it	2	2	1	1		6
6. Identify, build, describe, measure, and analyze mechanical systems (e.g., simple and complex compound machines) and describe the forces acting within those systems						
7. Give examples and describe how energy is transferred and conserved (e.g. electric to light and heat [light bulb], chemical to mechanical [fuel to propulsion])	1		1			2
Montana Science Content Standard 3 Students, through the inquiry process, demonstrate knowledge of characteristics, structures and function of living things, the process and diversity of life, and how living organisms interact with each other and their environment.	MS-PS2-1.	MS-PS2-2.	MS-PS2-3.	MS-PS2-4.	MS-PS2-5.	Grand Total
1. Compare the structure and function of prokaryotic cells (bacteria) and eukaryotic cells (plant, animal, etc.) including the levels of organization of the structure and function, particularly with humans						
2. Explain how organisms and systems of organisms obtain and use energy resources to maintain stable conditions (e.g., food webs,						

photosynthesis, respiration)						
3. Communicate the differences in the reproductive processes of a variety of plants and animals using the principles of genetic modeling (e.g., punnett squares)						
4. Investigate and explain the interdependent nature of populations and communities in the environment and describe how species in these populations adapt by evolving	1					1
5. Create and use a basic classification scheme to identify plants and animals						
Montana Science Content Standard 4 Students, through the inquiry process, demonstrate knowledge of the composition, structures, processes and interactions of Earth's systems and other objects in space.	MS-PS2-1.	MS-PS2-2.	MS-PS2-3.	MS-PS2-4.	MS-PS2-5.	Grand Total
1. Model and explain the internal structure of the earth and describe the formation and composition of earth's external features in terms of the rock cycle and plate tectonics and constructive and destructive forces						
2. Differentiate between rocks types and minerals types and classify both by how they are formed and the utilization by humans						
3. Use fossils to describe the geologic timeline						
4. Describe the water cycle, the composition and structure of the atmosphere and the impact of oceans on large-scale weather patterns						
5. Describe and model the motion and tilt of earth in relation to the sun, and explain the concepts of day, night, seasons, year, and climatic changes						
6. Describe the earth, moon, planets and other objects in space in terms of size, force of gravity, structure, and movement in relation to the sun						
7. Identify scientific theories about the origin and evolution of the earth and solar system						
Montana Science Content Standard 5 Students, through the inquiry process, understand how scientific knowledge and technological developments impact communities, cultures and societies.	MS-PS2-1.	MS-PS2-2.	MS-PS2-3.	MS-PS2-4.	MS-PS2-5.	Grand Total
1. Describe the specific fields of science and technology as they relate to occupations within those fields						
2. Apply scientific knowledge and process skills to understand issues and everyday events	1					1
3. Simulate collaborative problem solving and give examples of how scientific knowledge and technology are shared with other scientists and the public						
4. Use scientific knowledge to investigate problems and their proposed solutions and evaluate those solutions while considering environmental impacts	1					1
5. Describe how the knowledge of science and technology influences the development of the Montana American Indian cultures						
Montana Science Content Standard 6 Students understand historical developments in science and technology.	MS-PS2-1.	MS-PS2-2.	MS-PS2-3.	MS-PS2-4.	MS-PS2-5.	Grand Total
1. Give examples of scientific discoveries and describe the interrelationship between technological advances and scientific understanding, including Montana American Indian examples						
2. Identify major milestones in science that have impacted science, technology, and society						
3. Describe science as a human endeavor and an ongoing process						

Energy

Total respondents:	8
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Montana Science Content Standard 1 Students, through the inquiry process, demonstrate the ability to design, conduct, evaluate, and communicate the results and form reasonable conclusions of scientific investigations.	MS-PS3-1.	MS-PS3-2.	MS-PS3-3.	MS-PS3-4.	MS-PS3-5.	Grand Total
1. Identify a question, determine relevant variable and a control, formulate a testable hypothesis, plan and predict the outcome of an investigation, safely conduct scientific investigation, and compare and analyze data	4		6	6	3	19
2. Select and use appropriate tools including technology to make measurements (including metric units) and represent results of basic scientific investigations	6		4	5	3	18
3. Review, communicate and defend results of investigations, including considering alternative explanations	2		6	4	7	19
4. Create models to illustrate scientific concepts and use the model to predict change. (e.g., computer simulation, stream table, graphic representation)	3	7	4	1	3	18
5. Identify strengths and weakness in an investigation design	1		6	1	3	11
6. Compare how observations of nature form an essential base of knowledge among the Montana American Indians			1	3	4	8
Montana Science Content Standard 2 Students, through the inquiry process, demonstrate knowledge of properties, forms, changes and interactions of physical and chemical systems.	MS-PS3-1.	MS-PS3-2.	MS-PS3-3.	MS-PS3-4.	MS-PS3-5.	Grand Total
1. Classify, describe, and manipulate the physical models of matter in terms of: elements, and compounds, pure substances and mixtures, atoms, and molecules		1				1
2. Examine, describe, compare and classify objects and substances based on common physical properties and simple chemical properties						
3. Describe energy and compare and contrast the energy transformations and the characteristics of light, heat, motion, magnetism, electricity, sound and mechanical waves	6	2	5	2	4	19
4. Model and explain the states of matter are dependent upon the quantity of energy present in the system and describe what will change and what will remain unchanged at the particulate level when matter experiences an external force or energy change	2	3	5	7	3	20
5. Describe and explain the motion of an object in terms of its position, direction, & speed as well as the forces acting upon it	4	4				8
6. Identify, build, describe, measure, and analyze mechanical systems (e.g., simple and complex compound machines) and describe the forces acting within those systems		3	2	2		7
7. Give examples and describe how energy is transferred and conserved (e.g. electric to light and heat [light bulb], chemical to mechanical [fuel to propulsion])	1	5	5	1	4	16
Montana Science Content Standard 3 Students, through the inquiry process, demonstrate knowledge of characteristics, structures and function of living things, the process and diversity of life, and how living organisms interact with each other and their environment.	MS-PS3-1.	MS-PS3-2.	MS-PS3-3.	MS-PS3-4.	MS-PS3-5.	Grand Total
1. Compare the structure and function of prokaryotic cells (bacteria) and eukaryotic cells (plant, animal, etc.) including the levels of organization of the structure and function, particularly with humans						
2. Explain how organisms and systems of organisms obtain and use energy resources to maintain stable conditions (e.g., food webs, photosynthesis, respiration)						

3. Communicate the differences in the reproductive processes of a variety of plants and animals using the principles of genetic modeling (e.g., punnett squares)						
4. Investigate and explain the interdependent nature of populations and communities in the environment and describe how species in these populations adapt by evolving						
5. Create and use a basic classification scheme to identify plants and animals						
Montana Science Content Standard 4 Students, through the inquiry process, demonstrate knowledge of the composition, structures, processes and interactions of Earth's systems and other objects in space.	MS-PS3-1.	MS-PS3-2.	MS-PS3-3.	MS-PS3-4.	MS-PS3-5.	Grand Total
1. Model and explain the internal structure of the earth and describe the formation and composition of earth's external features in terms of the rock cycle and plate tectonics and constructive and destructive forces		1				1
2. Differentiate between rocks types and minerals types and classify both by how they are formed and the utilization by humans						
3. Use fossils to describe the geologic timeline						
4. Describe the water cycle, the composition and structure of the atmosphere and the impact of oceans on large-scale weather patterns						
5. Describe and model the motion and tilt of earth in relation to the sun, and explain the concepts of day, night, seasons, year, and climatic changes						
6. Describe the earth, moon, planets and other objects in space in terms of size, force of gravity, structure, and movement in relation to the sun						
7. Identify scientific theories about the origin and evolution of the earth and solar system						
Montana Science Content Standard 5 Students, through the inquiry process, understand how scientific knowledge and technological developments impact communities, cultures and societies.	MS-PS3-1.	MS-PS3-2.	MS-PS3-3.	MS-PS3-4.	MS-PS3-5.	Grand Total
1. Describe the specific fields of science and technology as they relate to occupations within those fields						
2. Apply scientific knowledge and process skills to understand issues and everyday events			1			1
3. Simulate collaborative problem solving and give examples of how scientific knowledge and technology are shared with other scientists and the public						
4. Use scientific knowledge to investigate problems and their proposed solutions and evaluate those solutions while considering environmental impacts			2	1	2	5
5. Describe how the knowledge of science and technology influences the development of the Montana American Indian cultures						
Montana Science Content Standard 6 Students understand historical developments in science and technology.	MS-PS3-1.	MS-PS3-2.	MS-PS3-3.	MS-PS3-4.	MS-PS3-5.	Grand Total
1. Give examples of scientific discoveries and describe the interrelationship between technological advances and scientific understanding, including Montana American Indian examples					1	1
2. Identify major milestones in science that have impacted science, technology, and society					1	1
3. Describe science as a human endeavor and an ongoing process					1	1

Waves and Electromagnetic Radiation

Total respondents:	4
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Montana Science Content Standard 1 Students, through the inquiry process, demonstrate the ability to design, conduct, evaluate, and communicate the results and form reasonable conclusions of scientific investigations.	MS-PS4-1.	MS-PS4-2.	MS-PS4-3.	Grand Total
1. Identify a question, determine relevant variable and a control, formulate a testable hypothesis, plan and predict the outcome of an investigation, safely conduct scientific investigation, and compare and analyze data			1	1
2. Select and use appropriate tools including technology to make measurements (including metric units) and represent results of basic scientific investigations	1			1
3. Review, communicate and defend results of investigations, including considering alternative explanations				
4. Create models to illustrate scientific concepts and use the model to predict change. (e.g., computer simulation, stream table, graphic representation)		2	1	3
5. Identify strengths and weakness in an investigation design				
6. Compare how observations of nature form an essential base of knowledge among the Montana American Indians	1			1
Montana Science Content Standard 2 Students, through the inquiry process, demonstrate knowledge of properties, forms, changes and interactions of physical and chemical systems.	MS-PS4-1.	MS-PS4-2.	MS-PS4-3.	Grand Total
1. Classify, describe, and manipulate the physical models of matter in terms of: elements, and compounds, pure substances and mixtures, atoms, and molecules				
2. Examine, describe, compare and classify objects and substances based on common physical properties and simple chemical properties				
3. Describe energy and compare and contrast the energy transformations and the characteristics of light, heat, motion, magnetism, electricity, sound and mechanical waves	1	1		2
4. Model and explain the states of matter are dependent upon the quantity of energy present in the system and describe what will change and what will remain unchanged at the particulate level when matter experiences an external force or energy change	1		1	2
5. Describe and explain the motion of an object in terms of its position, direction, & speed as well as the forces acting upon it		1		1
6. Identify, build, describe, measure, and analyze mechanical systems (e.g., simple and complex compound machines) and describe the forces acting within those systems		1		1
7. Give examples and describe how energy is transferred and conserved (e.g. electric to light and heat [light bulb], chemical to mechanical [fuel to propulsion])	2	2		4
Montana Science Content Standard 3 Students, through the inquiry process, demonstrate knowledge of characteristics, structures and function of living things, the process and diversity of life, and how living organisms interact with each other and their environment.	MS-PS4-1.	MS-PS4-2.	MS-PS4-3.	Grand Total
1. Compare the structure and function of prokaryotic cells (bacteria) and eukaryotic cells (plant, animal, etc.) including the levels of organization of the structure and function, particularly with humans			1	1
2. Explain how organisms and systems of organisms obtain and use energy resources to maintain stable conditions (e.g., food webs,				

photosynthesis, respiration)				
3. Communicate the differences in the reproductive processes of a variety of plants and animals using the principles of genetic modeling (e.g., punnett squares)				
4. Investigate and explain the interdependent nature of populations and communities in the environment and describe how species in these populations adapt by evolving				
5. Create and use a basic classification scheme to identify plants and animals				
<u>Montana Science Content Standard 4</u> Students, through the inquiry process, demonstrate knowledge of the composition, structures, processes and interactions of Earth's systems and other objects in space.	MS-PS4-1.	MS-PS4-2.	MS-PS4-3.	Grand Total
1. Model and explain the internal structure of the earth and describe the formation and composition of earth's external features in terms of the rock cycle and plate tectonics and constructive and destructive forces				
2. Differentiate between rocks types and minerals types and classify both by how they are formed and the utilization by humans				
3. Use fossils to describe the geologic timeline				
4. Describe the water cycle, the composition and structure of the atmosphere and the impact of oceans on large-scale weather patterns				
5. Describe and model the motion and tilt of earth in relation to the sun, and explain the concepts of day, night, seasons, year, and climatic changes				
6. Describe the earth, moon, planets and other objects in space in terms of size, force of gravity, structure, and movement in relation to the sun				
7. Identify scientific theories about the origin and evolution of the earth and solar system				
<u>Montana Science Content Standard 5</u> Students, through the inquiry process, understand how scientific knowledge and technological developments impact communities, cultures and societies.	MS-PS4-1.	MS-PS4-2.	MS-PS4-3.	Grand Total
1. Describe the specific fields of science and technology as they relate to occupations within those fields				
2. Apply scientific knowledge and process skills to understand issues and everyday events	1			1
3. Simulate collaborative problem solving and give examples of how scientific knowledge and technology are shared with other scientists and the public				
4. Use scientific knowledge to investigate problems and their proposed solutions and evaluate those solutions while considering environmental impacts				
5. Describe how the knowledge of science and technology influences the development of the Montana American Indian cultures				
<u>Montana Science Content Standard 6</u> Students understand historical developments in science and technology.	MS-PS4-1.	MS-PS4-2.	MS-PS4-3.	Grand Total
1. Give examples of scientific discoveries and describe the interrelationship between technological advances and scientific understanding, including Montana American Indian examples			1	1
2. Identify major milestones in science that have impacted science, technology, and society				
3. Describe science as a human endeavor and an ongoing process				